GREAT BAY
NATIONAL ESTUARINE
RESEARCH RESERVE

BUILDING GREEN INFRASTRUCTURE FOR A RESILIENT NEW HAMPSHIRE

Stay in touch

The NERRS Science Collaborative is committed to sharing information about the projects we fund in the most effective way we can. Updates about this project will be communicated through nerrs.noaa.gov, webinars, conferences, and meetings. If you would like to stay in touch with this project, contact our program coordinator Cindy Tufts: cindy.tufts@unh.edu

For information about this project, contact James Houle, project coordinator: 603.767.7091 or james.houle@unh.edu

For information about the collaborative aspects of this project, contact Julie LaBranch, collaboration lead: 603.778.0885 or jlabranch@rpc-nh.org

What's happening?

A team led by the University of New Hampshire Stormwater Center (UNHSC) and the Great Bay National Estuarine Research Reserve has received approximately $590,000 to promote green stormwater infrastructure in southern New Hampshire. The team will use collaborative techniques to work with towns, counties, businesses, and state agencies to support the use of green stormwater infrastructure as a means to protect water quality and increase community and ecosystem resilience to the impacts of a changing climate. They aim to provide technical assistance for green infrastructure projects; support green infrastructure policies and plans; promote partnerships among communities, practitioners and researchers; and offer technical training.

Why this project?

Among the many qualities that attract people to live in southern New Hampshire is the beauty of its beaches, wetlands, fields, and forests. Yet as the population grows, there has been a rise in the impervious surfaces that allow polluted stormwater runoff to flow into rivers, lakes, and coastal waters, and a decline in the natural infrastructure that preserves water quality and protects property from storms and floods. At the same time, a shifting climate is bringing more frequent and intense storms to the area. Excessive rain, combined with increasing impervious surfaces is generating more runoff—often

In southern New Hampshire, impervious surfaces can combine with more frequent severe storms to overwhelm existing stormwater infrastructure.

more than existing stormwater infrastructure can handle. Given the state of development and projections for future rainfall, some communities may experience up to 36 percent more runoff in the future.

Regional research conducted by UNHSC supports the idea that "green stormwater infrastructure" techniques that capture runoff close to its source and weave natural processes into the built environment could address these challenges. This could include structural treatments like rain gardens and pervious pavements, regulations that require improved stormwater treatment performance, and incentives to encourage property owners to protect water quality. However, stakeholders are often hesitant to use these techniques if the technical concepts are unfamiliar or the cost of implementation and maintenance is uncertain. This team plans to take a multifaceted approach that integrates technology demonstration, education, and collaborative network building to institutionalize green infrastructure in southern New Hampshire.

Learn more on back page...

Green stormwater infrastructure techniques mimic the function of undeveloped landscapes by capturing runoff close to its source and weaving natural processes into the built environment. This could include structural treatments like gravel wetlands and pervious pavements, as wells as regulations that require improved stormwater treatment performance.

About the funder

The NERRS Science Collaborative puts Reserve-based science to work for coastal communities coping with the impacts of land use change, stormwater, non-point source pollution, and habitat degradation in the context of a changing climate. Our threefold approach to connecting science to decision making includes:

- Funding: We award an average of $4 million annually to projects that incorporate collaboration and applied science to address a coastal management problem.
- Transfer of knowledge: We are committed to sharing the knowledge generated by the local, place-based research we fund. If you're interested in following this project, contact cindy.tufts@unh.edu.
- Graduate education: We support TIDES, a Master's of Science program at UNH that provides the skills needed to effectively link science to coastal decision making.

The program operates by a cooperative agreement between the University of New Hampshire (UNH) and the National Oceanic and Atmospheric Administration.

Learn more at....

nerrs.noaa.gov/ScienceCollaborative.aspx

How will this project work?

The project team—which includes the UNHSC, Great Bay National Estuarine Research Reserve, Southeast Watershed Alliance, Rockingham County Planning Commission, and Antioch University—will use the principles of public participation to create regional dialogue with stakeholders, build mutual trust, and link relevant scientific research to local knowledge. Stakeholders for this project include municipal staff and decision-makers from 42 towns in the regional watershed, the New Hampshire Coastal Adaptation Workgroup, and the Seacoast Stormwater Coalition, a group of larger communities with federal stormwater permits. The team will form an advisory board with representatives from these groups to ensure that stakeholders are effectively engaged throughout the project, and that their feedback is used to inform its course.

The project team will work with the board to identify "mentor" communities where they can install high-visibility green stormwater infrastructure projects that can be used to demonstrate the science and effectiveness of these practices for other cities and towns. The team will monitor these installations to assess their performance in reducing stormwater and pollutants that flow into the watershed. They also will work with stakeholders to complete an analysis of different land use scenarios and pollutant loading under climate change in the region's sub watersheds.

Ultimately the team will combine data from this analysis and demonstration site monitoring with input from stakeholders to develop a framework of resources for promoting and implementing green stormwater solutions in a network of towns throughout the region.

Volunteers planting a newly constructed bioretention system, adjacent to an impaired urban brook in Portsmouth, New Hampshire.